Homotopy perturbation method to a half-space in generalized thermoelastic for two models

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Abstract

In this paper, we considered a one-dimensional problem for a half-space in generalized thermoelastic for two models; Lord-Shulman (L-S) and the dualphase-lag (DPL) theories. The surface of the half-space is assumed to be traction free and subjected to the effects of a heat source varying exponentially with time at the boundary. The homotopy perturbation method is applied to obtain the approximate solution of thermoelastic interactions with boundary condition. The numerical results obtained are displayed graphically to show the influences of the new parameters.The effects of the heat source varying with time and zero traction force are studied on displacement, temperature and stress.

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